

IN THE CLAIMS:

1. (Currently Amended) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber;

at least one a part-carrying system movable inside said vacuum chamber;

at least one a discharge electrode;

at least one a diffuser associated with said discharge electrode for introduction of at least one fluid substance;

a housing containing at least partly said discharge electrode and/or said ~~at least one~~ diffuser, ~~wherein~~ said discharge electrode, said housing and said diffuser ~~are elongated and~~ extending in a direction parallel to a longitudinal axis of said vacuum chamber, and said housing ~~[[is]] defining an opening, said opening extending~~ opened parallel to said longitudinal axis of said vacuum chamber, ~~[[;]] characterized in that~~ said housing ~~[[is]] being located in an~~ approximately central position within said vacuum chamber when said housing is arranged inside said vacuum chamber, in an approximately central position.

2. (Currently Amended) Plant according to ~~Claim claim~~ 1, ~~characterized in that~~ wherein said part-carrying system rotates about an axis of rotation inside said vacuum chamber.

3. (Currently Amended) Plant according to ~~Claim claim~~ 1, ~~characterized in that~~ wherein said housing has the form of a substantially semi-cylindrical wall surrounding at least

partially said discharge electrode and said diffuser.

4. (Currently Amended) Plant according to claim 1, characterized in that wherein said housing is arranged inside said part-carrying system.

5. (Currently Amended) Plant according to claim 1, characterized in that it comprises further comprising:

a plurality of closing hatches, said housing, said discharge electrode and said diffuser being located on each of said closing hatches, said diffuser being located in an area of said discharge electrode, each of said closing hatches having said part-carrying system connected thereto;

a fixed body for alternately receiving one of said closing hatches and another of said closing hatches, one of said closing hatches and said fixed body defining a vacuum chamber when said fixed body receives one of said closing hatches, said part-carrying system being movable within said vacuum chamber when said fixed body receives one of said closing hatches cooperating alternately with one or other of two closing hatches so as to define a vacuum chamber; on each of said two hatches a respective part-carrying system movable inside said vacuum chamber when the plant is in operation; on each of said hatches, at least one high-voltage discharge electrode; for each hatch at least one diffuser supported by the respective hatch in the vicinity of the respective at least one discharge electrode; at least one housing for the assembly consisting of the discharge electrode and the respective diffuser being

provided on each hatch.

6. (Currently Amended) Plant according to ~~Claim claim~~ 5, characterized in that wherein said housing, said discharge electrode and said diffuser of each hatch are located inside the volume defined by the respective hatch, in the vicinity of the longitudinal axis of the vacuum chamber.

7. (Currently Amended) Plant according to ~~Claim claim~~ 5, characterized in that wherein said hatches are hinged with said central body on opposite sides thereof about hinging axes substantially parallel to the axis of the vacuum chamber, said axis being substantially vertical.

8. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein said vacuum chamber has a frontally closing hatch and a substantially horizontal longitudinal axis and in that said part-carrying system can be inserted into and extracted from said vacuum chamber.

9. (Currently Amended) Plant according to ~~Claim claim~~ 8, characterized in that wherein said housing, said discharge electrode and said diffuser have a horizontal extension substantially parallel to the axis of said vacuum chamber.

10. (Currently Amended) Plant according to ~~Claim claim~~ 8, characterized in that wherein said housing, said discharge electrode and said diffuser are movable with said part-carrying system so as to be inserted into said chamber and extracted therefrom.

11. (Currently Amended) Plant according to ~~Claim claim~~ 8, characterized in that wherein said housing, said discharge electrode and said diffuser are mounted on an end of said chamber substantially opposite the hatch for closing thereof.

12. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein said housing for the assembly consisting of discharge electrode and diffuser has the form of an arched surface.

13. (Currently Amended) Plant according to ~~Claim claim~~ 12, ~~characterized in that~~ wherein said housing has a shape of a cylindrical surface.

14. (Currently Amended) Plant according to ~~Claim claim~~ 12, ~~characterized in that~~ wherein the discharge electrode and the diffuser are arranged inside the arc defined by the cross section of the housing.

15. (Currently Amended) Plant according to ~~Claim claim~~ 14, ~~characterized in that~~ wherein the discharge electrode is located in the center of the arc of the respective housing and

the diffuser is located in a radially peripheral zone.

16. (Currently Amended) Plant according to ~~at least Claim claim~~ claim 5, characterized in that wherein the vacuum chamber defined by said body and by said closing hatches has a substantially cylindrical shape with a circular cross section.

17. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein said diffuser has a plurality of calibrated holes distributed along the longitudinal extension of said diffuser with a diameter increasing from a first end to a second end of said diffuser, the first end of the diffuser being connected to a duct supplying the product to be diffused inside the vacuum chamber and the second end being closed.

18. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein a second diffuser for the introduction of a substance in the fluid state is associated with said ~~at least one~~ discharge electrode.

19. (Currently Amended) Plant according to ~~Claim claim~~ claim 18, characterized in that wherein said ~~at least one~~ diffuser has the function of introducing a substance for the formation of a protective layer deposited on the parts treated in the vacuum chamber and said second diffuser has the function of introducing a gas.

20. (Currently Amended) Plant according to ~~Claim claim~~ 18, characterized in that wherein said second diffuser is enclosed in the volume protected by said housing.

21. (Currently Amended) Plant according to ~~Claim claim~~ 5, characterized in that wherein, on each of said hatches, the discharge electrode, the diffuser and the housing are located in the vicinity of the edge of the hatch which in the closed condition cooperates with the edge of the fixed body so as to form and close said vacuum chamber and in that said housing has a convexity directed toward the axis of rotation of the carousel.

22. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein two or more of said housings with corresponding discharge electrodes and diffusers are arranged inside said vacuum chamber.

23. (Currently Amended) Plant according to claim 1, ~~characterized in that~~ wherein said part-carrying system comprises a carousel rotating about a main axis of rotation, and a series of part-carrying devices rotating about respective auxiliary axes parallel to the main axis of rotation, the parts thus being imparted a planetary motion inside the vacuum chamber.

24. (New) A plant for vacuum metallization of objects treated in batches, comprising:
a plurality of closing hatches;
a fixed body cooperating alternately with one of said closing hatches and another of said

5 closing hatches, each closing hatch forming a vacuum chamber with said fixed body when said closing hatch is in a closed position, each of said hatches having a part-carrying system, said part-carrying system being movable inside said vacuum chamber when said closing hatch is in said closed position;

a high-voltage discharge electrode located on each of said closing hatches;

10 a diffuser for introducing at least one fluid substance in said vacuum chamber, said diffuser being located on each of said closing hatches in an area of said high-voltage discharge electrode;

15 a housing located on each closing hatch, said housing partially surrounding said high-voltage discharge electrode and said diffuser, said discharge electrode, said housing and said diffuser extending parallel to a longitudinal axis, said housing defining an opening parallel to said longitudinal axis, one housing of one of said closing hatches being located within said vacuum chamber, in an approximately central position.

25. (New) A plant for vacuum metallization of objects treated in batches, comprising:

a vacuum chamber, said vacuum chamber having a frontally closing hatch and a substantially horizontal longitudinal axis;

5 a part-carrying system movable inside said vacuum chamber, said part-carrying system being inserted into and extracted from said vacuum chamber;

a discharge electrode;

a diffuser associated with said discharge electrode for introduction of at least one fluid

substance;

10 a housing containing at least partly said discharge electrode and/or said at least one
diffuser, said housing, said discharge electrode and said diffuser being movable with said
part-carrying system such that said housing, said discharge electrode and said diffuser are
inserted into said vacuum chamber and extracted therefrom, wherein said discharge electrode
and said diffuser are elongated and extend parallel to a longitudinal axis, and said housing is
15 opened parallel to said axis, said housing being arranged inside said vacuum chamber, in an
approximately central position.